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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/923,862

08/06/2001

David G. Way

064731.0254

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10/18/2005

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EXAMINER

BELLO, AGUSTIN

ART UNIT

PAPER NUMBER

2633

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/923,862

Applicant(s)

WAY, DAVID G.

Examiner

Agustin Bello

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wantanabe (EP 0759681) of the prior art cited by the applicant.

Regarding Claims 1, 3, 5, 7, and 9, Wantanabe teaches a wavelength division multiplexing multiplexer, comprising: a plurality of transmitters (reference numeral 23-MN through 23-11 in Figure 11), a filter array including a plurality of filters (reference numeral 28-11 through 28-MN in Figure 11), each filter having a disparate center frequency and an adjustable spectrum width (inherent in a tunable wavelength filter) operable to filter a mixed bandwidth channel; and a combiner (reference numeral 16-1 through 16-N in Figure 11) operable to combine into a wavelength division multiplexing (WDM) signal a plurality of mixed bandwidth channels passing through the filters of the filter array.

Regarding Claims 2 and 4, Wantanabe differs from the claimed invention in that Wantanabe fails to specifically teach that the center frequencies of the filters are substantially equally spaced from each other. However, one skilled in the art would clearly have recognized that equally spacing the center frequencies of the filters would have provided for efficient use of bandwidth and would have reduced the possibility of cross talk between the channels. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have

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equally spaced the center frequencies of the filters in order to efficiently use the bandwidth provided and to avoid crosstalk.

Regarding Claims 6 and 8, Wantanabe teaches that the filter means comprises a plurality of filters (reference numeral 28-11 through 28-MN in Figure 11) each comprising means for adjusting a spectrum width of the filter (e.g. inherent in tunable wavelength filters).

Regarding Claim 11, Wantanabe teaches that at least one of the optical transmitters is operable to modulate data for a mixed bandwidth channel (inherent in the use of the modulators in Figure 11).

Regarding Claim 12, Wantanabe teaches a comprising a cross-connect (reference numeral 15-1 in Figure 11-14) operable to connect at least a subset of the optical transmitters to at least a subset of the filters in the filter array.

Regarding Claims 13 and 14, Wantanabe teaches at least one transponder (e.g. modulators 22-11 through 22-MN), the transponder operable to receive from a connected optical transmitter an optical signal having a center frequency, to generate a frequency adjusted optical signal (e.g. frequency/wavelength conversion) having a disparate center frequency and to provide the frequency adjusted optical signal to a connected filter of the filter array (reference numeral 32-11 through 32-MN in Figure 14).

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wantanabe in view of Oikawa (U.S. Patent No. 6,810,215).

Regarding claim 10, Watanabe differs from the claimed invention in that Watanabe fails to specifically teach that at least two of the optical transmitters comprise disparate rate modulators. However, Oikawa in the same field of optical regenerators teaches that this concept

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is well known in the art (Figures 7, 8-10). One skilled in the art would have been motivated to include disparate rate modulators in order to allow intra-network connections between optical networks having different signal rates and channel spacing (column 9 lines 41-44 of Oikawa). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to allow the optical transmitters of Watanabe to comprise disparate rate modulators as taught by Oikawa.

4. Claims 19-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wantanabe in view of Marmur (U.S. Patent No. 6,832,052).

Regarding Claims 19-21, 24-26, 31-33, 38-40, 45 and 46, Wantanabe differs from the claimed invention in that Wantanabe fails to specifically teach the use of a controller comprising logic encoded in media, the controller operable to determine a bandwidth for a channel, to select and connect an optical transmitter and a filter for the channel and to dynamically adjust the spectrum width of the filter to correspond to the bandwidth of the channel. However, one skilled in the art would clearly have recognized that dynamic adjustment of the bandwidth allocation system would have been beneficial. Furthermore, one skilled in the art would clearly have recognized that in order for the system to be truly dynamic, it would have required the use of a controller to orchestrate the use of the various components. Marmur teaches a management system and controller (reference numeral 1, 12 in Figure 1) which is capable of performing the functions claimed. One skilled in the art would have been motivated to incorporate this control mechanism into the device of Wantanabe in order to allow the elements of the system to be matched with the incoming bit rate signal (column 1 lines 8-24 of Marmur) and to allow automation of the identification of the input signal type (column 3 lines 59-67 of Marmur).

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Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have used a control system in the system of Wantanabe as taught by Roldan in order to orchestrate the dynamic bandwidth assignment between the elements of the system.

Regarding Claims 22, 23, 28, 35, and 42, Wantanabe teaches the transponders of the claimed invention and disparate first and second center frequencies, but differs from the claimed invention in that Wantanabe fails to specifically teach a control clock, the control clock having a plurality of clock sources dynamically selectable to correspond to a bit rate of the optical signal, the optical transponder operable to adjust the optical signal at a rate of a selected clock source from the first center frequency to a disparate second center frequency. However, Marmur, in the same field of endeavor, teaches that it is well known in the art to include a control clock as part of an optical regeneration system, the control clock having a plurality of clock sources dynamically selectable to correspond to a bit rate of the optical signal, the optical transponder operable to adjust the optical signal at a rate of a selected clock source (column 3 lines 38-46). One skilled in the art would have been motivated to include a control clock having a plurality of clock sources dynamically selectable to correspond to a bit rate of the optical signal, the optical transponder operable to adjust the optical signal at a rate of a selected clock source in order to achieve a jitter reduction (column 3 lines 38-46 of Marmur). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include a control clock having a plurality of clock sources dynamically selectable to correspond to a bit rate of the optical signal, the optical transponder operable to adjust the optical signal at a rate of a selected clock source in the system of Watanabe.

Regarding Claims 27, 34, and 41, as discussed above, Wantanabe teaches the use of

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modulator to convert the wavelength of the input signals from once center frequency to another.

Regarding Claims 29, 36, and 43, as discussed above Wantanabe teaches connecting a transponder to a channel filter.

Regarding Claims 30, 37, and 44, Wantanabe teaches that the channel filter comprises a transmission channel filter, further comprising adjusting a passband of a receiving channel filter at the center frequency of the group of base channels to correspond to the spectrum width for the channel (inherent in the use of tunable wavelength filters).

Response to Arguments

5. Applicant's arguments filed 7/29/05 have been fully considered but some are not persuasive. The applicant argues that the combination of references fails to specifically teach the limitations of the claimed invention. However, the examiner disagrees.

First, the applicant argues that Wantanabe fails to teach a plurality of filters with each filter having a disparate center frequency. However, the opposite is true. Wantanabe clearly teaches this limitation in that each filter is tunable to a different and distinct center frequency. See column 17 lines 6-15 of Wantanabe for clarity.

Next, the applicant argues that Wantanabe fails to meet the limitations of claim 2. However, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In this case, Wantanabe teaches all of the structural elements called for in the claimed invention, which are therefore capable of being set so that their center frequencies are substantially equally spaced apart. Furthermore, and as noted in the

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office action, the examiner believes that one skilled in the art would have possessed the ability to make these settings to the adjustable filters of Wantanabe, thereby producing the same results as those claimed.

Next, the applicant argues against the rejection of claim 13. Please see column 17 lines 21-27 for clarity and proof that Wantanabe teaches transponders that produce frequency adjusted signals having disparate center frequencies.

The balance of the applicant's arguments is rendered moot in view of the new grounds of rejection provided above.

Allowable Subject Matter

6. Claims 15-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AB


AGUSTIN BELLO
PRIMARY EXAMINER